REMARKS

Claims 1-5 are pending in this application. By this Amendment, claim 1 is amended. Support for the amendments to claim 1 can be found in the specification as originally filed, for example, at page 24, lines 3-6 and at page 24, lines 14-20; and in original claim 1. No new matter is added by these amendments.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Blackwell Rudasil in the May 11 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. 35 U.S.C. §112

The Office Action rejects claims 1-5 under 35 U.S.C. §112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. While Applicants do not necessarily agree with the rejection, claim 1 is amended herein to more clearly set forth the subject matter therein. Specifically, the amendments clarify that the claimed alkyl groups remain in the transparent coat layer after heat treatment. Applicants thank the Examiner for her helpful comments. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. 35 U.S.C. §103

A. Claims 1-4

The Office Action rejects claims 1-4 under 35 U.S.C. §103(a) over U.S. Patent No. 5,853,869 to Adachi et al., in view of U.S. Patent Application Publication No. 2001/0024685 to Boulton et al. Applicants respectfully traverse the rejection.

Independent claim 1 sets forth, in pertinent part, a "transparent conductive layered structure, comprising a transparent substrate and a transparent two-layered film being composed of a transparent conductive layer and a transparent coat layer being formed in succession on the transparent substrate and being cured by performing a heat treatment at 50

to 250°C; wherein ... the transparent coat layer comprises, as its main component, a binder matrix of silicon oxide including one or more types of alkyl groups selected from long chain alkyl groups containing 7 to 30 carbon atoms, said alkyl groups being present in the transparent coat layer of the cured transparent conductive layered structure." Claims 2-4 depend from claim 1 and incorporate all of the limitations thereof.

The Office Action takes the position that all of the features of claim 1 and its dependent claims 2-4 are either taught or suggested by Adachi, in combination with Boulton. Applicants respectfully disagree.

Adachi discloses conductive thin films that consist of a layer including indium tin oxide fine particles dispersed in a silicate-based matrix and an overcoating silicate film layer. *See* Adachi, Abstract. The silicates in the overcoating layer taught by Adachi are the dehydration condensation polymerization product of silanols and/or hydrolyzed ortho-alkyl silicates. *See* Adachi, col. 6, lines 13-30. Adachi teaches that its silicate polymer is sintered at temperatures of 200°C or below to form a hard silicate. *See* Adachi, col. 6, lines 27-56. As admitted by the Office Action, Adachi does not teach or suggest the claimed transparent coat layer composition comprising "as its main component, a binder matrix of silicon oxide including one or more types of alkyl groups selected from long chain alkyl groups containing 7 to 30 carbon atoms." Thus, Adachi alone cannot support a rejection of claim 1 and its dependent claims 2-4. Boulton does not remedy the shortcomings of Adachi.

Boulton teaches a protective multi-component coating prepared by applying a silicon oxide precursor coating solution to a substrate, allowing the coating solution to dry, and firing (heat treating) the coating at a temperature of more than about 400°C to form the protective coating. *See* Boulton, Abstract; [0003]; [0033]; claims 1, 3, 26. This heat treatment decomposes residual organic groups, including C_1-C_{20} alkyl groups, and makes the coating more dense. *See* Boulton, [0015]; [0021]. The Boulton coating is treated at temperatures of

more than 400°C, optionally with air or oxygen to assist with "burn-out" of residual organic groups, and this heat treatment is taught as important for achieving Boulton's protective coatings. *See* Boulton, [0033]. Boulton specifically states that sintering heat treatments, such as those conducted at temperatures of less than 200°C disclosed in Adachi, allow non-hydrolyzable organic groups to remain intact, which Boulton avoids by firing at higher temperatures. *See* Boulton, [0010]; [0033].

Claim 1 sets forth that a "transparent conductive layered structure, comprising a transparent substrate and a transparent two-layered film being composed of a transparent conductive layer and a transparent coat layer being formed in succession on the transparent substrate and being cured by performing a heat treatment at 50 to 250°C," and that C_7-C_{30} long-chain alkyl groups remain in the transparent coat layer after heat treating. Unlike Adachi, which does not teach the claimed transparent coat layer composition, and unlike Boulton, which teaches firing its coating compositions, at temperatures higher than the temperatures of the claimed heat treatment, to remove organic groups, the claimed transparent conductive layered structure includes long-chain alkyl groups after heat treatment. That is, neither Adachi nor Boulton teaches or suggests a transparent conductive layered structure in which a transparent coat layer has the claimed composition after heat treatment as claimed.

Because neither Adachi nor Boulton teaches or suggests a transparent conductive layered structure in which long chain alkyl groups remain in a transparent coat layer after a heat treatment at 50 to 250°C, as set forth in claim 1, no combination of Adachi and Boulton would have rendered claim 1 and its dependent claims obvious.

For at least these reasons, Applicants respectfully submit that claim 1 and its dependent claims 2-4 are patentable over Adachi and Boulton, individually and in combination. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Claims 1-5

The Office Action rejects claims 1-5 under 35 U.S.C. §103(a) over U.S. Patent No. 6,261,479 to Yukinobu et al., in view of U.S. Patent Application Publication No. 2001/0024685 to Boulton et al. Applicants respectfully traverse the rejection.

Claim 1 is as set forth above. Claims 2-5 are dependent from and include all of the limitations of claim 1.

The Office Action takes the position that all of the features of claim 1 and its dependent claims 2-5 are either taught or suggested by Yukinobu, in combination with Boulton. Applicants respectfully disagree.

Yukinobu discloses transparent electro-conductive structures that consist of a transparent substrate, a transparent electro-conductive layer including noble-metal-coated silver fine particles dispersed in a binder matrix and a transparent coat layer. *See* Yukinobu, Abstract; col. 6, lines 23-33. The Yukinobu transparent coat layer is a silicon oxide layer formed from a silica sol product of dehydration condensation polymerization of alkyl silicates. *See* Yukinobu, col. 11, lines 45-47; col. 12, lines 24-53. The Yukinobu silica sol overcoat is heated at temperatures between about 50 and 250°C to form a hard silicate. *See* Yukinobu, col. 11, lines 34-44. However, Yukinobu does not disclose the composition of its silica sol, and therefore, as admitted by the Office Action, Yukinobu does not disclose or suggest a transparent coat layer that "comprises, as its main component, a binder matrix of silicon oxide including one or more types of alkyl groups selected from long chain alkyl groups containing 7 to 30 carbon atoms, said alkyl groups being present in the transparent coat layer of the cured transparent conductive layered structure," as set forth in claim 1. That is, Yukinobu does not teach or suggest a transparent coat layer of the claimed composition. Thus, Yukinobu alone cannot support a rejection of claim 1 and its dependent claims 2-5. Boulton does not remedy the shortcomings of Yukinobu.

As discussed above, Boulton teaches a protective multi-component coating prepared by a method that includes firing its overcoat at a temperature of more than about 400°C, and this firing decomposes residual organic groups. *See* Boulton, Abstract; [0003]; [0015]; [0021]; [0033]; claims 1, 3, 26. Boulton teaches that lower temperature heat treatments, including those conducted at the temperatures disclosed in Yukinobu, allow non-hydrolyzable organic groups to remain intact, unlike in the Boulton firing step. *See* Boulton, [0010]; [0033].

In contrast to Yukinobu, which does not teach the claimed transparent coat layer composition, and Boulton, which teaches firing its coating compositions, at temperatures higher than the temperatures of the claimed heat treatment, to remove organic groups, the claimed transparent conductive layered structure includes long-chain alkyl groups after heat treatment. That is, neither Yukinobu nor Boulton teaches or suggests a transparent conductive layered structure in which a transparent coat layer has the claimed composition after heat treatment as claimed.

Because neither Yukinobu nor Boulton teaches or suggests a transparent conductive layered structure that includes a "transparent coat layer [that] comprises, as its main component, a binder matrix of silicon oxide including one or more types of alkyl groups selected from long chain alkyl groups containing 7 to 30 carbon atoms, said alkyl groups being present in the transparent coat layer of the cured transparent conductive layered structure," as set forth in claim 1, no combination of Yukinobu and Boulton would have rendered claim 1 and its dependent claims obvious.

For at least these reasons, Applicants respectfully submit that claim 1 and its dependent claims 2-5 are patentable over Yukinobu and Boulton, individually and in combination. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-5 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:JML/ccs

Attachment:
Petition for Extension of Time

Date: May 12, 2006

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